SIL Training for Oil & Gas

Service Objectives

- Translate IEC 61511 into confident, on-asset application across UAE oil and gas facilities.
- Conduct or review LOPA with credible initiating event frequencies and IPL independence.
- Allocate target SILs reflecting realistic consequences, occupancy, and enabling conditions.
- Develop concise, hydrocarbon-service SRS; select architectures/diagnostics to meet PFDavg in UAE ambient/corrosive conditions.
- Plan proof-test intervals and coverage; set clear override and bypass governance (authority, notification, time limits).
- Document verification/validation and assemble audit-ready evidence while balancing safety and production availability.

> Delivered by NPM practitioners with refinery, gas processing, and offshore experience. Vendor-neutral, standards-driven, and aligned to UAE audit expectations.

Who This Service Is For

- Process engineers (HAZID/HAZOP inputs, LOPA), instrumentation and controls engineers (SIF design, DCS/PLC/ESD integration).
- Operations supervisors and panel operators (overrides, inhibit logic, trip response); maintenance/reliability personnel (proof testing, DU failures).
- Project engineers and EPC representatives (brownfield modifications, tie-ins); HSE/process safety engineers (risk criteria, performance standards, verification).
- UAE context: asset integrity leads, shutdown/turnaround planners, integrity management under ADNOC requirements, OSHAD SF, Dubai Municipality and Civil Defence expectations.
- Applicable to offshore platforms, sour gas processing trains, refineries, terminals, and pipeline operations.

Duration & Process Overview

- 2-day core programme: IEC 61511 lifecycle, LOPA fundamentals, SRS essentials.
- 1-day applied workshop: site scenarios (LOPA development, cause-and-effect reviews, plant walkdowns as applicable).
- Optional half-day clinics: proof testing and override/bypass governance.
- Blended delivery available (virtual instructor-led for theory; on-site for exercises). Class size 8–16; English or bilingual English–Arabic.

Methodology

Phase	Objective / What It Covers	Duration / Deliverable
Targeted Needs Analysis	Agree learning goals; select 2–4 site-specific scenarios under NDA; align with corporate criteria.	Pre-course scoping; agreed scope pack.
Core Learning	IEC 61511 lifecycle, LOPA methods, SRS structure for hydrocarbon service.	2 days; calculators, templates, example SRS and LOPA worksheets.
Applied LOPA & SIL Allocation	Develop robust LOPA on actual units; calibrate initiating events, consequences, and IPL credits.	1 day; auditable LOPA outcomes.
SIF Design & SRS Drafting	Sensor voting, final element configurations, PFDavg estimation, logic solver integration.	Integrated; SRS excerpts and PFDavg estimates.
Proof Testing & Overrides Clinic	Test coverage and intervals; CMMS integration; bypass/override controls and limits.	Optional 0.5 day; draft proof-test procedures and bypass plan.
Verification, Validation & Assurance	V&V planning, FAT/SAT, walkdowns, cause-and-effect verification, evidence packs.	Integrated; verification matrix and evidence pack outline.
Assessment & Certification	Quizzes, team exercises, calculator tasks; peer review of SRS excerpts and intervals.	NPM Certificate of Completion with hours, modules, and assessed outcomes.

Operational Application

- Optimised setpoints and proof-test intervals to reduce nuisance trips without eroding protection.
- Time-bound override management during maintenance and TARs with defined authority and alarms.
- Improved audit readiness with traceable IEC 61511 lifecycle evidence.